The following Listing of the Claims will replace all prior versions and all prior listings of the claims in the present application:

Listing of the Claims

1. (Cancelled) A method of identifying a compound that is active on a polypeptide comprising the amino acid sequence of SEQ ID NO: 16, said method comprising

contacting a candidate compound with said polypeptide, and

detecting binding of said candidate compound to said polypeptide, wherein detection of binding is indicative that said compound is active on said polypeptide.

2. (Cancelled) The method of claim I wherein said detecting comprises the step of measuring the binding of a candidate compound, wherein the compound is directly or indirectly detectably labeled, to said polypeptide.

3. (Cancelled) The method of claim 1 wherein said detecting comprises measurement by phage display.

4. (Cancelled) The method of claim 1 wherein said detecting comprises measurement by surface plasmon resonance.

5. (Cancelled) The method of claim 1 wherein said detecting comprises measurement by FRET.

6. (Cancelled) The method of claim 1 wherein said detecting comprises measurement of fluorescence polarization changes.

7. (Cancelled) The method of claim 1 wherein said detecting comprises a scintillation proximity assay.

8. (Cancelled) The method of claim 1 wherein said detecting comprises a biosensor assay.

9. (Cancelled) The method of claim 1 wherein said compound is selected from the group consisting of a small molecule, a peptidomimetic compound, and a fragment or derivative of a bacteriophage inhibitor protein.

10. (Cancelled) The method of claim 1 wherein said active compound is a peptide synthesized by a recombinant expression system and purified, or artificially synthesized.

11. (Cancelled) A method of identifying a compound that is active on a polypeptide comprising the amino acid sequence of SEQ ID NO: 16, said method comprising the step of:

contacting a first and a second polypeptide in the presence and absence of a candidate compound, wherein said first polypeptide comprises the amino acid sequence of SEQ ID NO: 16 or a fragment or variant thereof that specifically binds phage 77ORF104 and said second polypeptide comprises phage 77ORF104 or a domain thereof that specifically binds a polypeptide of SEQ ID NO: 16, and detecting the binding of said first and said second polypeptides to each other, wherein a decrease in the binding of said first and said second polypeptides in the presence of said candidate compound relative to the binding in the absence of said candidate compound identifies said candidate compound as a compound that is active on a polypeptide comprising the amino acid sequence of SEQ ID NO: 16.

12. (Cancelled) The method of claim 11 wherein said first or said second polypeptide is directly or indirectly detectably labeled.

13. (Cancelled) The method of claim 11 wherein said detecting comprises measurement by phage display.

14. (Cancelled) The method of claim 11 wherein said detecting comprises measurement by surface plasmon resonance.

15. (Cancelled) The method of claim 11 wherein said detecting comprises measurement by FRET.

16. (Cancelled) The method of claim 11 wherein said detecting comprises measurement of fluorescence polarization changes.

17. (Cancelled) The method of claim 11 wherein said detecting comprises a scintillation proximity assay.

18. (Cancelled) The method of claim 11 wherein said detecting comprises a biosensor assay.

19. (Cancelled) The method of claim 11 wherein said the candidate compound is selected from the group consisting of a small molecule, a peptidomimetic compound, and a fragment or derivative of a bacteriophage inhibitor protein.

20. (Cancelled) The method of claim 11 wherein said the candidate compound is a peptide synthesized by expression systems and purified, or artificially synthesized.

21. (Cancelled) An agonist or an antagonist of the activity of a DnaI polypeptide or a gene encoding said polypeptide.

22. (Cancelled) A method of identifying a compound that is active on a DnaI polypeptide, said method comprising the steps of:

contacting a candidate compound with cells expressing a polypeptide comprising SEQ ID NO: 16, and

detecting DnaI activity in said cells, wherein a decrease in activity relative to DnaI activity in cells not contacted with said candidate compound is indicative that said candidate compound is active on a DnaI polypeptide.

23. (Cancelled) A method of making an antibacterial compound, comprising the steps of:

determining whether a candidate compound is active on a polypeptide comprising the amino acid sequence of SEQ ID NO: 16 or a gene encoding said polypeptide; and

synthesizing or purifying said candidate compound in an amount sufficient to provide a therapeutic effect when administered to an organism infected by a bacterium naturally producing a polypeptide comprising the amino acid sequence of SEQ ID NO: 16.

24. (Cancelled) The method of claim 23 wherein the antibacterial compound is selected from the group consisting of a small molecule, a peptidomimetic compound, and a fragment or derivative of a bacteriophage inhibitor protein.

25. (Cancelled) The method of claim 23 wherein the antibacterial compound is a peptide synthesized by expression systems and purified, or artificially synthesized.

26. (Currently Amended) A method for inhibiting a bacterium, comprising contacting said bacterium with an inhibitor ~~compound~~ active on a polypeptide comprising the amino acid sequence of SEQ ID NO: 16 or a gene encoding said polypeptide.

27. (Original) The method of claim 26 wherein said contacting is performed in vitro.

28. (Original) The method of claim 26 wherein said contacting is performed in vivo in an animal.

29. (Currently Amended) The method of claim 26 wherein said inhibitor ~~compound~~ is selected from the group consisting of a small molecule, a peptidomimetic compound, and a fragment or derivative of a bacteriophage inhibitor protein.

30. (Currently Amended) The method of claim 26 wherein said inhibitor ~~compound~~ is a peptide synthesized by a recombinant expression system and purified, or artificially synthesized.

31. (Currently Amended) A method for treating a bacterial infection in an animal suffering from an infection, comprising administering to the animal a therapeutically effective amount of an ~~compound~~ inhibitor active on a polypeptide comprising the amino acid sequence of SEQ ID NO: 16 or a gene encoding the polypeptide.

32. (Currently Amended) The method of claim 31 wherein said inhibitor ~~compound~~ is selected from the group consisting of a small molecule, a peptidomimetic compound, and a fragment or derivative of a bacteriophage inhibitor protein.

33. (Currently Amended) The method of claim 31 wherein said inhibitor ~~compound~~ is a peptide synthesized by expression systems and purified, or artificially synthesized.

34. (Cancelled) A method of prophylactic treatment to prevent bacterial infection comprising contacting an indwelling device with a compound active on a polypeptide comprising the amino acid sequence of SEQ ID NO: 16 before its implantation into a mammal, such contacting being sufficient to prevent *S. aureus* infection at the site of implantation.

35. (Currently Amended) A method of prophylactic treatment to prevent infection of an animal by a bacterium comprising administering to said animal an inhibitor ~~a compound~~ that is active on a *S. aureus* DnaI polypeptide comprising the amino acid sequence of SEQ ID NO: 16

or a gene encoding the polypeptide in an amount sufficient to reduce adhesion of the bacterium to a tissue surface of said animal.

36. (Cancelled) A method of diagnosing in an individual an infection with *Staphylococcus aureus,* comprising:

determining the presence in the individual of a polypeptide comprising the amino acid sequence of SEQ ID NO: 16, wherein the presence of said polypeptide is diagnostic for S. *aureus* infection.

37. (Cancelled) The method of claim 36 wherein said determining step comprises contacting a biological sample from said individual with an antibody specific for an epitope present on a polypeptide comprising the amino acid sequence of SEQ ID NO: 16.

38. (Cancelled) A method of diagnosing in an individual an infection with Staphylococcus aureus, comprising

determining the presence in said individual of a nucleic acid sequence encoding a polypeptide comprising the amino acid sequence of SEQ ID NO: 16.

39. (Cancelled) The method of claim 38 wherein said determining step comprises contacting a nucleic acid sample of said individual with an isolated, purified or enriched nucleic acid probe of at least 15 nucleotides in length that hybridizes under stringent hybridization conditions with the sequence of SEQ ID NO: 1, or the complement of such probe.

40. (Cancelled) An isolated, purified or enriched polynucleotide comprising a polynucleotide sequence that has at least 55% identity to the sequence of SEQ ID NO: 1, or the complement of said polynucleotide sequence.

41. (Cancelled) An isolated, purified or enriched polynucleotide comprising a sequence encoding the amino acid sequence of SEQ ID NO: 16, or the complement of said polynucleotide.

42. (Cancelled) An isolated, purified or enriched polynucleotide comprising SEQ ID NO: 17 or the complement of said polynucleotide sequence.

43. (Cancelled) An isolated, purified or enriched polynucleotide consisting of the sequence of SEQ ID NO: 17.

44. (Cancelled) An isolated, purified or enriched polypeptide having at least 55% identity to the amino acid sequence of SEQ ID NO: 16.

45. (Cancelled) An isolated, purified or enriched polypeptide of at least 50 amino acids in length having at least 50 % identity to the amino acid sequence of SEQ ID NO: 16.

46. (Cancelled) An isolated, purified or enriched polypeptide having at least 70% similarity to the amino acid sequence of SEQ ID NO: 16.

47. (Cancelled) An isolated, purified or enriched polypeptide of at least 20 amino acids in length having at least 60% similarity to the amino acid sequence of SEQ ID NO: 16.

48. (Cancelled) An isolated polypeptide comprising the amino, acid sequence of SEQ ID NO: 16.

49. (Cancelled) An isolated polypeptide consisting of the amino acid sequence of SEQ ID NO: 16.

50. (Cancelled) An isolated, purified or enriched antibody specific for a polypeptide of SEQ ID NO: 16.

51. (Cancelled) A composition comprising a bacteriophage 77 ORF 104 polypeptide and a polypeptide comprising the amino acid sequence of SEQ ID NO: 16 or a variant thereof that specifically binds phage 77 ORF 104 polypeptide.

52. (Cancelled) A composition comprising a nucleic acid encoding bacteriophage 77 ORF 104 and a nucleic acid comprising SEQ ID NO: 17.

53. (New) A method for inhibiting a bacterium, comprising contacting said bacterium with an inhibitor capable of decreasing the activity of or decreasing the expression of a polypeptide selected from the group consisting of:

- a polypeptide comprising the amino acid sequence of SEQ ID NO: 2;
- a polypeptide comprising the amino acid sequence of SEQ ID NO: 16; and
- a polypeptide comprising the amino acid sequence of SEQ ID NO: 18.

54. (New) The method of claim 53, wherein said contacting is performed *in vitro*.

55. (New) The method of claim 53, wherein said contacting is performed *in vivo* in an animal.

56. (New) The method of claim 53, wherein said contacting is performed *in vivo* in a human.

57. (New) The method of claim 53, wherein said inhibitor is selected from the group consisting of a small molecule, a peptidomimetic compound, and a fragment or derivative of a bacteriophage inhibitor protein.

58. (New) The method of claim 53, wherein said an inhibitor is a peptide synthesized by a recombinant expression system and purified, or artificially synthesized.

59. (New) A method for inhibiting a bacterium, comprising contacting said bacterium with an inhibitor capable of decreasing the activity or decreasing the expression of a polypeptide selected from the group consisting of:

- a DnaI polypeptide comprising at least 75% identity over 50 or more amino acids to the amino acid sequence of SEQ ID NO: 2;

- a DnaI polypeptide comprising at least 85% similarity over 50 or more amino acids to the amino acid sequence of SEQ ID NO: 2;

- a DnaI polypeptide comprising at least 75% identity over 50 or more amino acids to the amino acid sequence of SEQ ID NO: 16;

- a DnaI polypeptide comprising at least 85% similarity over 50 or more amino acids to the amino acid sequence of SEQ ID NO: 16;

- a DnaI polypeptide comprising at least 75% identity over 50 or more amino acids to the amino acid sequence of SEQ ID NO: 18;

- a DnaI polypeptide comprising at least 85% similarity over 50 or more amino acids to the amino acid sequence of SEQ ID NO: 18; and

- fragments comprising an amino acid sequence having at least 50 contiguous amino acids from the amino acid of SEQ ID NO: 2; SEQ ID NO: 16; and SEQ ID NO: 18;

wherein said polypeptide has an activity selected from the group consisting of:

a) directly interacting with bacteriophage 77 ORF 104 protein or a DnaI-binding fragment thereof in a manner that results in at least 10 fold reduction of ^{3} H-thymidine incorporation in a bacterial DNA replication assay relative to ^{3} H-thymidine incorporation in an assay lacking bacteriophage 77 ORF 104 protein or a DnaI-binding fragment thereof;

b) directly interacting with bacteriophage 77 ORF 104 protein or a DnaI-binding fragment thereof in a manner that results in at least 10% inhibition of plasmid replication by bacteriophage 77 ORF 104 protein or a DnaI-binding fragment in a plasmid replication assay; and

c) aiding in the loading of S. aureus DnaC helicase onto replicative primosomes.

60. (New) The method of claim 59, wherein said contacting is performed *in vitro*.

61. (New) The method of claim 59, wherein said contacting is performed *in vivo* in an animal.

62. (New) The method of claim 59, wherein said contacting is performed *in vivo* in a human.

63. (New) The method of claim 59, wherein said inhibitor is selected from the group consisting of a small molecule, a peptidomimetic compound, and a fragment or derivative of a bacteriophage inhibitor protein.

64. (New) The method of claim 59, wherein said inhibitor is a peptide synthesized by a recombinant expression system and purified, or artificially synthesized.

65. (New) A method for treating or preventing a bacterial infection in a mammal, comprising administering to said mammal a therapeutically effective or prophylactically effective amount of an antibacterial agent capable of decreasing the activity of or decreasing the expression of a polypeptide selected from the group consisting of:

- a polypeptide comprising the amino acid sequence of SEQ ID NO: 2;
- a polypeptide comprising the amino acid sequence of SEQ ID NO: 16; and
- a polypeptide comprising the amino acid sequence of SEQ ID NO: 18.

66. (New) A method for treating or preventing a bacterial infection in a mammal, comprising administering to said mammal a therapeutically effective or prophylactically effective amount of an antibacterial agent capable of decreasing the activity of or decreasing the expression of a polypeptide selected from the group consisting of:

- a DnaI polypeptide comprising at least 75% identity over 50 or more amino acids to the amino acid sequence of SEQ ID NO: 2;
- a DnaI polypeptide comprising at least 85% similarity over 50 or more amino acids to the amino acid sequence of SEQ ID NO: 2;

- a DnaI polypeptide comprising at least 75% identity over 50 or more amino acids to the amino acid sequence of SEQ ID NO: 16;

- a DnaI polypeptide comprising at least 85% similarity over 50 or more amino acids to the amino acid sequence of SEQ ID NO: 16;

- a DnaI polypeptide comprising at least 75% identity over 50 or more amino acids to the amino acid sequence of SEQ ID NO: 18;

- a DnaI polypeptide comprising at least 85% similarity over 50 or more amino acids to the amino acid sequence of SEQ ID NO: 18; and

- fragments comprising an amino acid sequence having at least 50 contiguous amino acids from the amino acid of SEQ ID NO: 2; SEQ ID NO: 16; and SEQ ID NO: 18;

wherein said polypeptide has an activity selected from the group consisting of:

a) directly interacting with bacteriophage 77 ORF 104 protein or a DnaI-binding fragment thereof in a manner that results in at least 10 fold reduction of ^{3} H-thymidine incorporation in a bacterial DNA replication assay relative to ^{3} H-thymidine incorporation in an assay lacking bacteriophage 77 ORF 104 protein or a DnaI-binding fragment thereof;

b) directly interacting with bacteriophage 77 ORF 104 protein or a DnaI-binding fragment thereof in a manner that results in at least 10% inhibition of plasmid replication by bacteriophage 77 ORF 104 protein or a DnaI-binding fragment in a plasmid replication assay; and

c) aiding in the loading of S. aureus DnaC helicase onto replicative primosomes.

67. (New) A method for inhibiting a bacterium, comprising contacting the bacterium with an inhibitor binding to an active domain of *S. aureus* DnaI.

68. (New) The method of claim 67, wherein said active domain comprises amino acids selected from the group consisting of amino acids 1-313, amino acids 64-313, and amino acids 150-313 from SEQ ID NO: 2.

69. (New) The method of claim 67, wherein said inhibitor consists of an antibacterial agent inhibiting the biological activity of said *S. aureus* DnaI.

70. (New) The method of claim 69, wherein said biological activity is selected from the group consisting of:

a) directly interacting with bacteriophage 77 ORF 104 protein or a DnaI-binding fragment thereof in a manner that results in at least 10 fold reduction of ^{3} H-thymidine incorporation in a bacterial DNA replication assay relative to ^{3} H-thymidine incorporation in an assay lacking bacteriophage 77 ORF 104 protein or a DnaI-binding fragment thereof;

b) directly interacting with bacteriophage 77 ORF 104 protein or a DnaI-binding fragment thereof in a manner that results in at least 10% inhibition of plasmid replication by bacteriophage 77 ORF 104 protein or a DnaI-binding fragment in a plasmid replication assay; and

c) aids in the loading of *S. aureus* DnaC helicase onto replicative primosomes.

71. (New) The method of claim 67, wherein said binding inhibits *S. aureus* DnaI activity of aiding in the loading of *S. aureus* DnaC helicase onto replicative primosomes.

72. (New) The method of claim 67, wherein said inhibitor treats or prevents a *S. aureus* infection in a mammal.

73. (New) The method of claim 72, wherein said mammal consists of a human.